

**NATIONAL SCIENCE FOUNDATION
ARLINGTON, VA 22230**

**Engineering Directorate
Division of Design, Manufacture & Industrial Innovation**

**Advisory Committee for
Small Business Innovation Research (SBIR) and
Small Business Technology Transfer (STTR)
Programs**

**Meeting Minutes
8 January 2003
Birmingham, AL**

A. INTRODUCTION

The National Science Foundation (NSF) Advisory Committee (AdComm) for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs met on 8 Jan 2003 at the Sheraton Birmingham Hotel, Birmingham, AL. The meeting was held during the 2003 NSF Design, Service and Manufacturing Grantees and Research Conference 6-9 Jan 2003 at the same location (called hereafter DMII Conference).

The meeting commenced at 2:00 PM and ended at approximately 5:00 PM.

Advisory Committee members in attendance were:

Dr. Chris Busch (Chairman)
Ms. Penny K. Pickett
Mr. Milton Stewart (with Joan Stewart)
Dr. E. Jennings Taylor
Mr. Tyrone Taylor
Dr. Meg Wilson
Dr. Jose Zayas-Castro

Advisory Committee members absent:

Dr. Sudhir Bhagwan
Dr. Robert Norwood
Ms. RoseAnn B. Rosenthal
Dr. David B. Spencer
Mr. Maurice Swinton

NSF representatives attending the meeting were:

Dr. Warren DeVries, Director, Division of Design, Manufacture and Industrial Innovation
Dr. Joe Hennessey, Senior Advisor, Industrial Innovation
Dr. Kesh Narayanan, Director, Industrial Innovation

**B. NSF RESPONSE TO 18-19 JUN 2002 ADCOMM MEETING:
COMMENTS AND RECOMMENDATIONS**

Joe Hennessey and Kesh Narayanan reviewed actions taken by the NSF SBIR/STTR Program Office in response to comments and recommendations made by the AdComm at the 18-19 Jun 2002 meeting. Their comments and related AdComm comments and recommendations at the 8 Jan 2003 meeting are summarized below. The numbered items below correspond to those in the report from the AdComm meeting on 18-19 Jun 2002.

1. Phase 1 Proposal Review Process

Joe Hennessey summarized the new policy that limits the number of Phase 1 proposals that individual small businesses including their subsidiaries may submit to NSF to 4 per solicitation (SBIR and STTR submissions combined). This policy was announced at the SBIR session of the DMII Conference on Monday morning, 6 Jan 2003. Hennessey emphasized that the measure was of submissions, and that withdrawn proposals would count toward the limit of 4.

The NSF SBIR/STTR Program Office is planning to evaluate a pilot screening system in June on a selected sample of Phase 1 proposals. In the first trial, the same proposals will also go through the normal NSF review process in parallel. If both processes yield essentially the same evaluations, the program will seek NSF approval to use such a screening process to reduce the number of Phase I proposals that are submitted to full panel review by about 50% while still providing at least 3 reviews for each submitted proposal.

2. State Partnerships and Outreach

Meg Wilson said that she was working with RoseAnn Rosenthal toward recommendations on state partnerships and outreach as agreed at the Jun 2002 AdComm meeting.

Kesh Narayanan suggested existing industries in need of (or with opportunities for) technology insertion are good candidates for SBIR competition. He cited Wyoming Sawmills (NSF Phase 1, 2 and 2B winner) as an example.

3. Matchmaker

Kesh Narayanan reviewed the status of Matchmaker. He reported that 18 investors and 6 small businesses currently are signed up. Narayanan said that NSF SBIR Program Managers will promote Matchmaker with appropriate Phase 2 winners in their respective award portfolios. The inclusion of strategic partners in Matchmaker is still planned.

Several participants in the meeting cited the lack of awareness of the SBIR Program among investors and industry. Kesh Narayanan discussed the need to get industry people engaged with the NSF SBIR Program and Matchmaker. He reviewed his promotion of Matchmaker at investor forums such as those sponsored by the National Association of Seed and Venture Funds (NASVF), as well as with other groups such as the Industrial Research Institute (IRI).

4. Phase 2 and 2B Submissions

Joe Hennessey said that the Phase 2 "Fund with Revisions" procedure has been implemented. He said that 8-12 Phase 2 proposals out of 95 were sent back to the proposing small businesses for revision in the last round.

Hennessey then reviewed current and planned Phase 2B procedures. He announced at the SBIR session of the DMII Conference that two annual closing dates for Phase 2B submissions have been established (March and November) as recommended by the AdComm at the Jun 2002 meeting. However, each proposal may only be submitted once. He noted that half of the Phase 2B funding is disbursed at the time the Phase 2B supplement is granted, and the balance funded 6 months later. In addition, he noted that the Phase 2 funding retention is held at NSF until all Phase 2 and 2B reporting and other deliverable requirements are met.

Hennessey noted the importance of maintaining the integrity of Phase 2B procedures to enable the Program to continue. Therefore, care is being taken to insure proper procedures are followed in granting Phase 2B supplements.

5. Stage-gating Phase 2 Awards

Joe Hennessey said that controls are now in place at the Principal Investigator level to insure that reporting and other deliverable requirements are up to date on current or previous grants before new awards are granted. NSF will look into implementing the same at the firm level.

Hennessey said that NSF has decided that formal stage-gating of Phase 2 funding as recommended by the AdComm at the Jun 2002 meeting was not feasible since NSF awards are grants and not contracts.

6. Commercialization Successes and Measurement

Ritchie Coryell presented the results of his commercialization success evaluation at the SBIR session of the DMII Conference, and Joe Hennessey reviewed these results in more detail at the AdComm meeting 8 Jan 2003. The period of the evaluation was from 1996-98 and was carried out by telephone and email communications with awardees. The summary of the results is as follows:

Successful:	34%
Tentatively Successful	15%
Unsuccessful:	51%

Hennessey noted that these results were consistent with recent studies performed by NASA on its SBIR award portfolio.

Hennessey summarized plans for continuing the commercialization measurements under the direction of Ritchie Coryell.

Hennessey said NSF is developing the capability to track compliance annually with the 5-year (after completion of the Phase 2 project) commercialization reporting requirement. When completed, non-compliant small businesses will be ineligible for further awards

Hennessey and Narayanan reviewed the status of the ongoing National Research Council (NRC) study of the SBIR Program. The study is funded by the five largest SBIR agencies (DOD, NIH, DOE, NASA and NSF). Ritchie Coryell is the NSF point of contact for this study. BRTRC has been retained by NRC to carry out details of the study. BRTRC is now preparing a questionnaire to be distributed to SBIR winners for data input to the study. After a somewhat turbulent start, Hennessey and Narayanan are now satisfied that the NRC project is progressing well.

Hennessey and Narayanan told the AdComm that NRC has solicited input from the SBIR agencies on suggestions for improving the SBIR Program. Hence, the AdComm was encouraged to submit to NSF suggested improvements to the SBIR Program.

7. Commercialization Planning for Phase 2

Hennessey reviewed the current activity to support Commercialization Planning in Phase 2 proposals. He noted that an RFP for Commercialization Planning contractor will be "going out soon" from NSF. The current contractor is Dawnbreaker (Jenny Servo).

Hennessey said that the success ratio of Phase 2 proposals submitted with and without Commercialization Planning support (from Dawnbreaker) was about the same in the most recent competitions. However, the overall quality of the Commercialization Plans submitted has improved significantly compared to a few years ago.

Kesh Narayanan discussed the need for more consistent Phase 2 proposal Commercialization Plan presentations for required and planned funding, and for revenue projections. He suggested a "template" that would identify the numbers desired. The AdComm discussed with Hennessey and Narayanan options for conveying the requirements for funding and revenue information desired. After the discussion, the AdComm recommended that the instructions for the Commercialization Plan preparation include wording that specified in adequate detail the funding and revenue information required, rather than using a template. The instructions should include the requirement that assumptions used in preparing the funding and revenue data be included.

The AdComm believed a template would lead to a less thoughtful "filling in the blank" approach, while specifying the requirements in words would allow more flexibility for the small businesses in conveying the required information.

8. Proposal Reviewers

Joe Hennessey stated that adequate reviewers were available for SBIR proposals. At the same time, he said NSF was always interested in identifying more qualified reviewers. Each NSF SBIR Program Managers maintains a reviewer data bases that they call on in forming their panels.

Hennessey addressed the issue of commercial reviewers in Phase 1 that the AdComm recommended in its report from the Jun 2002 meeting. Hennessey said NSF planned to continue the Phase 1 reviewer process as before, but with more emphasis on Criterion 2 (broader impacts).

Evaluation of proposal reviewer performance now is done by individual Program Managers. Hennessey said that interactive panels made possible by FastLane promote online networking capability now that induces "peer pressure" resulting in better reviewer performance.

Several AdComm members offered assistance in identifying additional reviewers, especially commercial/business reviewers.

9. Homeland Security Focus

Joe Hennessey said that Homeland Security research will continue to be integrated into the current four broad area topics.

10. Administrative Resources

Joe Hennessey reported that covering travel expenses was not a serious issue at this time, and that the primary limitation is Program Manager time.

The NSF SBIR Program Office continues to encourage SBIR winners to convey their "success stories" to NSF Office of Legislative and Public Affairs (OLPA) as a means of promoting the NSF SBIR Program. An email account <tellus@nsf.gov> has been established to capture NSF success stories including those of SBIR winners.

11. Clarification of Allowable Costs

This issue was not discussed at the AdComm meeting.

C. 2003 NSF DESIGN, SERVICE AND MANUFACTURING GRANTEES AND RESEARCH CONFERENCE: COMMENTS AND RECOMMENDATIONS

All AdComm members present had high praise for the DMII Conference that brought together NSF SBIR/STTR Phase 2 and 2B winners with DMII academic grantees. Feedback from SBIR winners to AdComm members (mainly at the poster sessions) indicated the SBIR winners also placed high value on the conference. The DMII conference sessions, poster session interactions with other SBIR winners and academic grantees, and other networking opportunities all were cited by SBIR winners present as valuable experiences.

Several AdComm members noted that SBIR winner poster sessions focused primarily on technology, and relatively little on commercialization issues. AdComm member E. Jennings Taylor checked all SBIR posters and reported to the AdComm the following compilation regarding poster emphasis on commercialization:

No discussion of commercialization, markets and/or IP (simply listing commercial applications not counted)	69
Some discussion of commercialization, markets and/or IP	26
A lot of discussion of commercialization, markets and/or IP	<u>8</u>
Total	103

AdComm member discussions with SBIR winners at the poster sessions revealed that little guidance was given about the content of their posters. The AdComm recommends that more guidance on poster content (including relative importance of technology and commercialization plans) be provided participants for the next DMII Conference.

There was discussion about alternate configurations for the DMII meeting. One option offered was combining the DMII Conference with a National SBIR Conference. However, the consensus was that this would sacrifice substantial progress made over the past few years in developing relationships between DMII SBIR winners and academic grantees.

Another meeting option discussed was including Phase 1 winners in the DMII Conference. But the consensus was that this would lead to a conference that was too large, and participants with interests and needs that were too broad for a single event. The AdComm meeting participants thought that this would result in less effective networking and learning.

D. MODIFIED PHASE 2B PROGRAM: COMMENTS AND RECOMMENDATIONS

Kesh Narayanan outlined a plan under consideration by NSF to modify the current Phase 2B Program that is a supplement to Phase 2 grants. Currently, Phase 2B matches \$0.50 (NSF) for every \$1.00 of Phase 2B funding provided by an eligible third party. NSF provides from a minimum of \$50 K up to a maximum of \$250 K for each Phase 2B supplement. The supplement extends the Phase 2 grant period for 1 year, and NSF provides funds at the beginning of the Phase 2B period (50%) and 6 months into the Phase 2B period (50%).

The modified Phase 2B plan under consideration would increase the maximum of amount of Phase 2B funding from \$250 K to \$500 K, and continue the 1:2 match requirement on for all NSF SBIR funds provided. The period of the Phase 2B also would be extended from 1 year to 2 years for Phase 2B supplements exceeding \$250K.

Currently, about 50 Phase 2B supplements are awarded annually. In the modified Phase 2B Program, Narayanan said he would expect about 10 of these to be for the full \$500 K of NSF match funding. He pointed out that such a Phase 2 and 2B award would capture \$2 million of total funding for a \$1 million NSF investment. For the total NSF Phase 2B Program, the suggested approach would capture approximately \$30 million of third party funding for approximately \$15 million of NSF investment.

Narayanan said the suggested SBIR Phase 2B modifications would need to be approved by NSF and SBA before implementation.

Generally, the AdComm was very enthusiastic about the suggestions for a modified Phase 2B Program. However, some concern was expressed about the impact of the suggested Phase 2B modifications on NSF SBIR Program compliance with statutory and SBA Policy Directive provisions.

The AdComm recommended that the NSF SBIR Program explore the feasibility of implementing the suggested Phase 2B option, and that careful consideration be given to the statutory and SBA Policy Directive compliance issue.

E. CONCLUSION

At the end of the meeting, the AdComm members present unanimously praised the innovative approaches and high achievements of the NSF SBIR and STTR Programs. The meeting closed with an ovation for the Program leaders and team members, and adjourned at about 5:00 PM.

END OF REPORT